

FIG. 1A

cagggatcag ggttccagga actcaggatc tgcagtgagg accagacacc actgattgca 60
gga atg tgt tcc ctc ccc atg gca aga tac tac ata att aaa tat gca 108
Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Tyr Ala
1 5 10 15
gac cag aag gct cta tac aca aga gat ggc cag ctg ctg gtg gga gat 156
Asp Gln Lys Ala Leu Tyr Thr Arg Asp Gly Gln Leu Leu Val Gly Asp
20 25 30
cct gtt gca gac aac tgc tgt gca gag aag atc tgc aca ctt cct aac 204
Pro Val Ala Asp Asn Cys Cys Ala Glu Lys Ile Cys Thr Leu Pro Asn
35 40 45
aga ggc ttg gac cgc acc aag gtc ccc att ttc ctg ggg atc cag gga 252
Arg Gly Leu Asp Arg Thr Lys Val Pro Ile Phe Leu Gly Ile Gln Gly
50 55 60
ggg agc cgc tgc ctg gca tgt gtg gag aca gaa gag ggg cct tcc cta 300
Gly Ser Arg Cys Leu Ala Cys Val Glu Thr Glu Gly Pro Ser Leu
65 70 75
cag ctg gag gat gtg aac att gag gaa ctg tac aaa ggt ggt gaa gag 348
Gln Leu Glu Asp Val Asn Ile Glu Glu Leu Tyr Lys Gly Gly Glu Glu
80 85 90 95
gcc aca cgc ttc acc ttc ttc cag agc agc tca ggc tcc gcc ttc agg 396
Ala Thr Arg Phe Thr Phe Phe Gln Ser Ser Ser Gly Ser Ala Phe Arg
100 105 110
ctt gag gct gct gcc tgg cct ggc tgg ttc ctg tgt ggc ccg gca gag 444
Leu Glu Ala Ala Ala Trp Pro Gly Trp Phe Leu Cys Gly Pro Ala Glu
115 120 125
ccc cag cag cca gta cag ctc acc aag gag agt gag ccc tca gcc cgt 492
Pro Gln Gln Pro Val Gln Leu Thr Lys Glu Ser Glu Pro Ser Ala Arg
130 135 140
acc aag ttt tac ttt gaa cag agc tgg tag ggagacagga aactgcgttt 542
Thr Lys Phe Tyr Phe Glu Gln Ser Trp
145 150
tagccttggtg cccccaaacc aagctcatcc tgctcagggt ctatggtagg cagaataatg 602
tcccccgaaa tatgtccaca tcctaataccc aagatctgtg catatgttac catacatgtc 662
caaagagggtt ttgcaaatgt gattatgtta aggatcttga aatgaggaga caatcctggg 722
ttatccttgt gggctcagtt taatcacaag aaggaggcag gaagggagag tcagagagag 782
aatggaagat accatgcttc taattttgaa gatggagtga ggggccttga gccacaaaat 842
gcaggtgttt ttagaagggtg gaaaagccaa gggaacggat tctcctctag agtctccgga 902

FIG. 1B

aggaacacag ctcttgacac atggatttca gctcagtgac acccatttca gactttctgac 962
ctccacaact ataaaaataat aaacttgtgt tattgtaaac ctctaaaaaa aaaaaaaaa 1020

[illegible]

FIG. 2A

cagggatcag ggttccagga actcaggatc tgcagtgagg accagacacc actgattgca 60

gga atg tgt tcc ctc ccc atg gca aga tac tac ata att aaa tat gca 108
Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Tyr Ala
1 5 10 15

gac cag aag gct cta tac aca aga gat ggc cag ctg ctg gtg gga gat 156
Asp Gln Lys Ala Leu Tyr Thr Arg Asp Gly Gln Leu Leu Val Gly Asp
20 25 30

cct gtt gca gac aac tgc tgt gca gag aag atc tgc ata ctt cct aac 204
Pro Val Ala Asp Asn Cys Cys Ala Glu Lys Ile Cys Ile Leu Pro Asn
35 40 45

aga ggc ttg gcc cgc acc aag gtc ccc att ttc ctg ggg atc cag gga 252
Arg Gly Leu Ala Arg Thr Lys Val Pro Ile Phe Leu Gly Ile Gln Gly
50 55 60

ggg agc cgc tgc ctg gca tgt gtg gag aca gaa gag ggg cct tcc cta 300
Gly Ser Arg Cys Leu Ala Cys Val Glu Thr Glu Gly Gly Pro Ser Leu
65 70 75

cag ctg gag gat gtg aac att gag gaa ctg tac aaa ggt ggt gaa gag 348
Gln Leu Glu Asp Val Asn Ile Glu Glu Leu Tyr Lys Gly Gly Glu Glu
80 85 90 95

gcc aca cgc ttc acc ttc ttc cag agc agc tca ggc tcc gcc ttc agg 396
Ala Thr Arg Phe Thr Phe Phe Gln Ser Ser Ser Gly Ser Ala Phe Arg
100 105 110

ctt gag gct gct gcc tgg cct ggc tgg ttc ctg tgt ggc ccg gca gag 444
Leu Glu Ala Ala Ala Trp Pro Gly Trp Phe Leu Cys Gly Pro Ala Glu
115 120 125

ccc cag cag cca gta cag ctc acc aag gag agt gag ccc tca gcc cgt 492
Pro Gln Gln Pro Val Gln Leu Thr Lys Glu Ser Glu Pro Ser Ala Arg
130 135 140

acc aag ttt tac ttt gaa cag agc tgg tag ggagacagga aactgcgttt 542
Thr Lys Phe Tyr Phe Glu Gln Ser Trp
145 150

tagccttggtg cccccaaacc aagctcatcc tgctcagggt ctatggtagg cagaataatg 602

tccccgaaa tatgtccaca tcctaataccc aagatctgtg catatgttac catacatgtc 662

caaagagggt ttgcaaatgt gattatgtta aggatcttga aatgaggaga caatcctggg 722

ttatccttgt gggctcagtt taatcacaag aaggaggcag gaaggagagag tcagagagag 782

aatggaagat accatgcttc taattttgaa gatggagtga ggggccttga gccaaacaaat 842

gcaggtgttt ttagaagggt gaaaagccaa gggaacggat tctcctctag agtctccgga 902

FIG. 2B

aggaacacag ctcttgacac atggatttca gctcagtgac acccatttca gacttctgac 962
 ctccacaact ataaaataat aaacttgtgt tattgtaaac ctctaaaaaa aaaaaaaaa 1020

[illegible]

FIG. 3

gctcccgcca ggagaaagga acattctgag gggagtctac accctgtgga gctcaag 57

atg gtc ctg agt ggg gcg ctg tgc ttc cgt gag gac cag aca cca ctg 105
Met Val Leu Ser Gly Ala Leu Cys Phe Arg Glu Asp Gln Thr Pro Leu
1 5 10 15

att gca gga atg tgt tcc ctc ccc atg gca aga tac tac ata att aaa 153
Ile Ala Gly Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys
20 25 30

tat gca gac cag aag gct cta tac aca aga gat ggc cag ctg ctg gtg 201
Tyr Ala Asp Gln Lys Ala Leu Tyr Thr Arg Asp Gly Gln Leu Leu Val
35 40 45

gga gat cct gtt gca gac aac tgc tgt gca gag aag atc tgc ata ctt 249
Gly Asp Pro Val Ala Asp Asn Cys Cys Ala Glu Lys Ile Cys Ile Leu
50 55 60

cct aac aga ggc ttg gcc cgc acc aag gtc ccc att ttc ctg ggg atc 297
Pro Asn Arg Gly Leu Ala Arg Thr Lys Val Pro Ile Phe Leu Gly Ile
65 70 75 80

cag gga ggg agc cgc tgc ctg gca tgt gtg gag aca gaa gag ggg cct 345
Gln Gly Gly Ser Arg Cys Leu Ala Cys Val Glu Thr Glu Glu Gly Pro
85 90 95

tcc cta cag ctg gag gat gtg aac att gag gaa ctg tac aaa ggt ggt 393
Ser Leu Gln Leu Glu Asp Val Asn Ile Glu Glu Leu Tyr Lys Gly Gly
100 105 110

gaa gag gcc aca cgc ttc acc ttc ttc cag agc agc tca ggc tcc gcc 441
Glu Glu Ala Thr Arg Phe Thr Phe Phe Gln Ser Ser Ser Gly Ser Ala
115 120 125

ttc agg ctt gag gct gct gcc tgg cct ggc tgg ttc ctg tgt ggc ccg 489
Phe Arg Leu Glu Ala Ala Ala Trp Pro Gly Trp Phe Leu Cys Gly Pro
130 135 140

gca gag ccc cag cag cca gta cag ctc acc aag gag agt gag ccc tca 537
Ala Glu Pro Gln Gln Pro Val Gln Leu Thr Lys Glu Ser Glu Pro Ser
145 150 155 160

gcc cgt acc aag ttt tac ttt gaa cag agc tgg tag ggagacagga 583
Ala Arg Thr Lys Phe Tyr Phe Glu Gln Ser Trp
165 170

aactgcgttt tagccttgtg cccccaacc aagctcatcc tgctcagggt ctatggtagg 643

cagaataatg tccccgaaa tatgtccaca tcctaataccc aagatctgtg catatgttac 703

catacatgtc caaagagggt ttgcaaagt gattatgtta a 744

FIG. 4A

	1				50
IL-1_alpha	MAEVPKLASE	MMAYYSGNED	DLFFEADGPK	QMKCSFQDLD	LCPLDGGIQL
IL-1_beta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1RA	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1_delta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
CS329	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
Tango-77	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
Zilla4	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1_zeta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1RA_beta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
Spoil_II	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1_epsilon	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1_eta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	51				100
IL-1_alpha	RISDHHSYSG	FRQAASVVVA	MDKLRKMLVP	CPQTFQENDL	STFFPFIFEE
IL-1_beta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1RA	~~~~~	~~~~~	~~~~~	~~~~~MEIC	RGLRSHLITL
IL-1_delta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
CS329	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
Tango-77	~~~~~	~MSFVGENS	GVKMGSEDWE	KDEPQCCLD	PAGSPLEPGP
Zilla4	~~~~~	~MSFVGENS	GVKMGSEDWE	KDEPQCCLD	PAGSPLEPGP
IL-1_zeta	~~~~~	~~~~~	~~~~~	~~~~~	MSGCDRRETE
IL-1RA_beta	~~~~~	MRGTPGDADG	GGRAVYQS..	.....	.....
Spoil_II	~~~~~	MRGTPGDADG	GGRAVYQSSE	SNAVGMGLWR	LRPSALTLSL
IL-1_epsilon	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
IL-1_eta	~~~~~	~~~~~	~~~~~	~~~~~	~~~~~
	101				150
IL-1_alpha	EPIFFDTWDN	EAYVHDAPVR	SLNCTLRDSQ	QKSLVMSGPY	ELKALHLQGG
IL-1_beta	~~~~~	~~~~~APVR	SLNCTLRDSQ	QKSLVMSGPY	ELKALHLQGG
IL-1RA	LLFLFHSETI	CRPSGRKSSK	IQAFRIWDVN	QKTFYLRNN.	QLVAGYLQGP
IL-1_delta	~~~~~	~~~~~MVLSG	ALCFRMKDSA	LKVLYLHNN.	QLLAGGLHAG
CS329	~~~~~	~~~~~MCSLPM	ARYYIIKYAD	QKALYTRDG.	QLLVGDPVAD
Tango-77	SLPTMNFVH.	.T.....	.....	.....	.....
Zilla4	SLPTMNFVH.	.TSPKVKNLN	PKKFSIHDQD	HKVLVLDSG.	NLIA..VPDK
IL-1_zeta	TKGKNSFKKR	LRGPKVKNLN	PKKFSIHDQD	HKVLVLDSG.	NLIA..VPDK
IL-1RA_beta	.....	.....MCK	PITGTINDLN	QQVWTLQGG.	NLVA..VPRS
Spoil_II	VEAPAFSAPL	CTLPFPVCK	PITGTINDLN	QQVWTLQGG.	NLVA..VPRS
IL-1_epsilon	~~~~~	~MEKALKIDT	PQQGSIQDIN	HRVWVLQDQ.	TLIA..VPRK
IL-1_eta	~~~~~	~MNPQREAA	PKSYAIRDSR	QMVWVLSGN.	SLIA..APLS
	151				200
IL-1_alpha	DMEQQVVFMS	...SFVQGEE	SNDKIPVALG	LKEKNLYLSC	VLKDDK..PT
IL-1_beta	DMEQQVVFMS	...SFVQGEE	SNDKIPVALG	LKEKNLYLSC	VLKDDK..PT
IL-1RA	NVNLEEKIDV	VP....IEP	...HALFLG	IHGGKMCLSC	VKSGDE..TR
IL-1_delta	KVIKGEEISV	VPNRWLDASL	...SPVILG	VQGSQCLSC	.GVGQE..PT
CS329	NC.CAEKICT	LPNRGLDRTK	...VPIFLG	IQGSRCCLAC	VETEED..PS
Tango-77	....KIFFA	LASSLSSA.S	AEKGSPILLG	VSKGEFCLYC	DKDKGQSHPS
Zilla4	NYIRPEIFFA	LASSLSSA.S	AEKGSPILLG	VSKGEFCLYC	DKDKGQSHPS
IL-1_zeta	NYIRPEIFFA	LASSLSSA.S	AEKGSPILLG	VSKGEFCLYC	DKDKGQSHPS
IL-1RA_beta	DSVTPVTAV	ITCKYPEALE	QGRGDPYLG	IQNPENCLYC	EKVGEQ..PT
Spoil_II	DSVTPVTAV	ITCKYPEALE	QGRGDPYLG	IQNPENCLYC	EKVGEQ..PT
IL-1_epsilon	DRMSPVTIAL	ISCRHVETLE	KDRGNPIYLG	LNGLNLCLMC	AKVGDQ..PT
IL-1_eta	RSIKPVTLHL	IACRDTEFSD	KEKGNMVLG	IKGKDLCLFC	AEIQGK..PT

FIG. 4B

	201				250
IL-1_alpha	LQLESVDPKN	Y..PKKKMEK	RFVFNKIEIN	NKLEFESAQF	PNWYISTSQA
IL-1_beta	LQLESVDPKN	Y..PKKKMEK	RFVFNKIEIN	NKLEFESAQF	PNWYISTSQA
IL-1RA	LQLEAVNITD	LSENRKQDKR	.FAFIRSDSG	PTTSFESAAC	PGWFLCTAME
IL-1_delta	LTLEPVNIME	LYLGAKESKS	.FTFYRRDMG	LTSSFESAAY	PGWFLCTVPE
CS329	LQLEDVNIEE	LYKGGEETR	.FTFFQSSSG	SAFRLEAAAW	PGWFLCGPAE
Tango-77	LQLKKEKLMK	LAAQKESARR	PFIFYRAQVG	SWNMLESAAH	PGWFICTSCN
Zilla4	LQLKKEKLMK	LAAQKESARR	PFIFYRAQVG	SWNMLESAAH	PGWFICTSCN
IL-1_zeta	LQLKKEKLMK	LAAQKESARR	PFIFYRAQVG	SWNMLESAAH	PGWFICTSCN
IL-1RA_beta	LQLKEQKIMD	LYGQPEPV.K	PFLFYRAKTG	RTSTLESVAF	PDWFIA.SSK
Spoil_II	LQLKEQKIMD	LYGQPEPV.K	PFLFYRAKTG	RTSTLESVAF	PDWFIA.SSK
IL-1_epsilon	LQLKEKDIMD	LYNQPEPV.K	SFLFYHSQSG	RNSTFESVAF	PGWFIASVSE
IL-1_eta	LQLKEKNIMD	LYVEKKAQ.K	PFLFFHNKEG	STSVFQSVSY	PGWFIATSTT
	251				290
IL-1_alpha	ENMPVFL...	.GGTKGGQDI	TDFTMQFVSS	~~~~~	
IL-1_beta	ENMPVFL...	.GGTKGGQDI	TDFTMQFVSS	~~~~~	
IL-1RA	ADQPVSLTNM	PDEG...VMV	TKFYFQEDE~	~~~~~	
IL-1_delta	ADQPVRLTQL	PENGGWNAPI	TDFYFQQCD~	~~~~~	
CS329	PQQPVQLTKE	SEPSAR....	TKFYFEQSW~	~~~~~	
Tango-77	CNEPVGVTDK	FENRKH....	IEFSFQPVCK	AEMSPSEVSD	
Zilla4	CNEPVGVTDK	FENRKH....	IEFSFQPVCK	AEMSPSEVSD	
IL-1_zeta	CNEPVGVTDK	FENRKH....	IEFSFQPVCK	AEMSPSEVSD	
IL-1RA_beta	RDQPIILTSE	LGKSYN....	TAFELNIND~	~~~~~	
Spoil_II	RDQPIILTSE	LGKSYN....	TAFELNIND~	~~~~~	
IL-1_epsilon	GGCPLILTQE	LGKANT....	TDFGLTMLF~	~~~~~	
IL-1_eta	SGQPIFLTKE	RGITNN....	TNFYLDSE~	~~~~~	

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Phylogenetic Tree of the Emerging IL-1-ra Gene Family

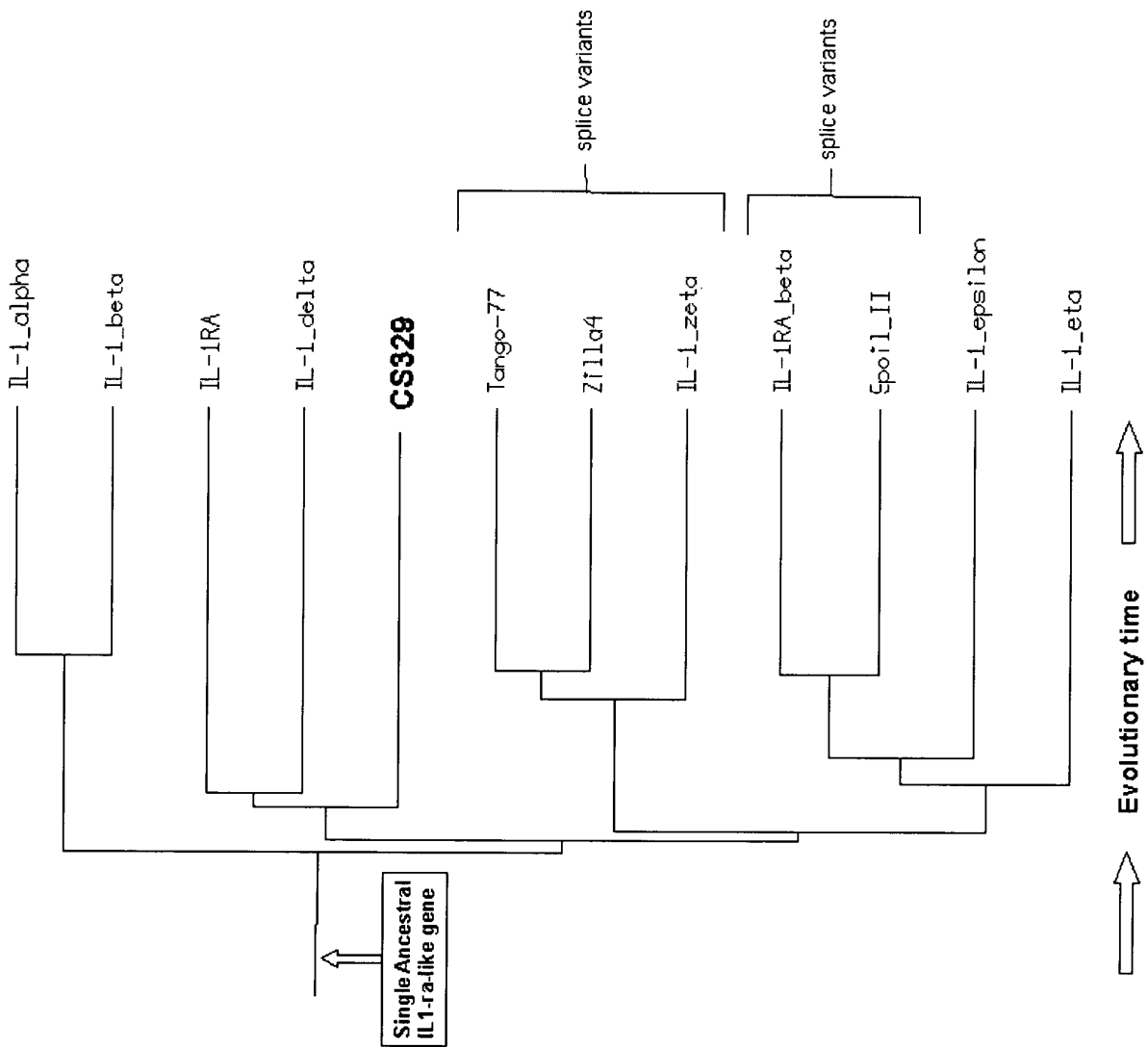


FIG. 5

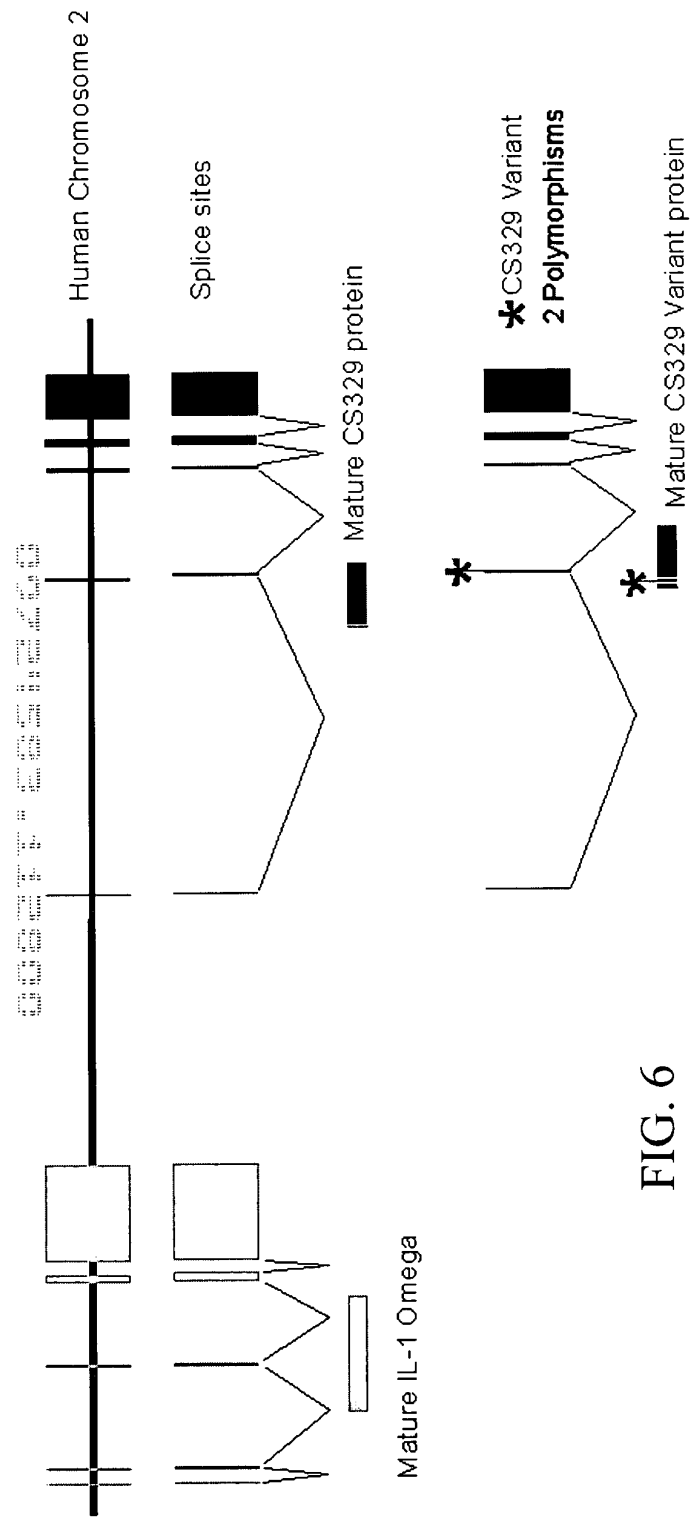


FIG. 6

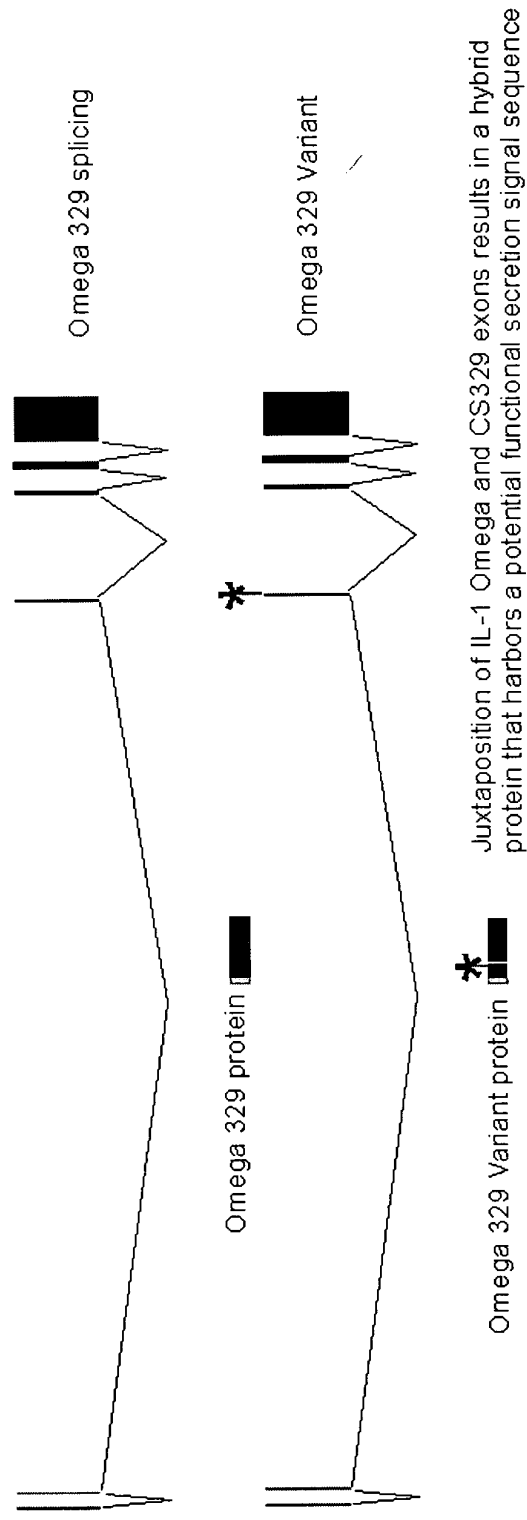


FIG. 7

atg tgc tcc ctt ccc atg gca aga tac tac ata atc aag gat gca cat	48
Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Asp Ala His	
1 5 10 15	
caa aag gct ttg tac aca cgg aat ggc cag ctc ctg ctg gga gac cct	96
Gln Lys Ala Leu Tyr Thr Arg Asn Gly Gln Leu Leu Leu Gly Asp Pro	
20 25 30	
gat tca gac aat tat agt cca gag aag gtc tgt atc ctt cct aac cga	144
Asp Ser Asp Asn Tyr Ser Pro Glu Lys Val Cys Ile Leu Pro Asn Arg	
35 40 45	
ggc cta gac cgc tcc aag gtc ccc atc ttc ctg ggg atg cag gga gga	192
Gly Leu Asp Arg Ser Lys Val Pro Ile Phe Leu Gly Met Gln Gly Gly	
50 55 60	
agt tgc tgc ctg gcg tgt gta aag aca aga gag gga cct ctc ctg cag	240
Ser Cys Cys Leu Ala Cys Val Lys Thr Arg Glu Gly Pro Leu Leu Gln	
65 70 75 80	
ctg gag gat gtg aac atc gag gac cta tac aag gga ggt gaa caa acc	288
Leu Glu Asp Val Asn Ile Glu Asp Leu Tyr Lys Gly Gly Glu Gln Thr	
85 90 95	
acc cgt ttc acc ttt ttc cag aga agc ttg gga tct gcc ttc agg ctt	336
Thr Arg Phe Thr Phe Phe Gln Arg Ser Leu Gly Ser Ala Phe Arg Leu	
100 105 110	
gag gct gct gcc tgc cct ggc tgg ttt ctc tgt ggc cca gct gag ccc	384
Glu Ala Ala Ala Cys Pro Gly Trp Phe Leu Cys Gly Pro Ala Glu Pro	
115 120 125	
cag cag cca gtg cag ctc acc aaa gag agt gaa ccc tcc acc cat act	432
Gln Gln Pro Val Gln Leu Thr Lys Glu Ser Glu Pro Ser Thr His Thr	
130 135 140	
gaa ttc tac ttt gag atg agt cgg taa	459
Glu Phe Tyr Phe Glu Met Ser Arg	
145 150	

FIG. 8

```

1  MCSLPMARYYIIKYADQKALYTRDGQLLVGDPVADNCCAEKICTLPNRGL 50
  |||||
1  MCSLPMARYYIIKDAHQKALYTRNGQLLLGDPDSDNYSPEKVCILPNRGL 50
  .
51 DRTKVPIFLGIQGGSRCLACVETEEGPSLQLEDVNIEELYKGGEATRFT 100
  |||.|||||.|||||.|||||.|||||.|||||.|||||.|||||.
51 DRSKVPIFLGMQGGSCCLACVKTREGPLLQLEDVNIEDLYKGGEQTTTFT 100
  .
101 FFQSSSGSAFRLEAAAWPGWFLCGPAEPQQPVQLTKESEPSARTKFYFEQ 150
  |||.|||||.|||||.|||||.|||||.|||||.|||||.|||||.
101 FFQRSLGSAFRLEAAACPGWFLCGPAEPQQPVQLTKESEPSTHTEFYFEM 150
  .
151 SW 152
  |
151 SR 152

```

FIG. 9A

actagttctcc	catagacaac	agctgaatgt	acgaggtcag	aagcaaggcc	tgccccagaa	60
ccattgcaag	ccaggtgctg	tcttgattgt	agcctcataa	aaaactgatg	cagaattgcc	120
ccaccaacat	gctccagatt	cctgctccac	agaaaccctg	tgaactaacc	atgttgcttt	180
tagattctgc	agtaagttga	taatctgcag	taaataacat	tcgatgaaag	agaaacatgt	240
gtagttactt	tattatgatc	aaaactttat	ttctccactc	tttccatttt	ccttctcaga	300
attgacacca	gcctttcact	aacccaaata	gcctatttta	atgctgatca	tacttctctt	360
gttaactgtt	acctgttccc	aaaaggtaca	attccctttc	gaccatagct	gcatctccca	420
cctgcacacc	aggatgtttc	tcatattttc	acctaaaaca	ttggggacta	caagtgaaag	480
caaaagaggg	ggcccatatc	agaaccccag	gtattttagc	gtaaaactca	cttgtcaggc	540
cagcttgaca	ggtttacagt	ttgtagaagg	accagaaaga	aggtagccaa	gacagaagag	600
gcaacctctg	cttgtcctag	aaccttcagt	ccatatacat	ctaagctccc	cagcaccatt	660
tctaccacag	acctctcaga	gttcctgagg	atgcagaccc	caggacactg	acctcagttt	720
ccaggcaggg	tttctgcaca	cccccttcac	actgectgac	tgggagttag	tctcatggtg	780
caacactact	ttgggacact	gtacccatcc	cctcgaccta	cagaaaccat	tcacttttca	840
aggtcacctc	ctataggaag	tatttgaaaa	gatgagagtc	atgggtcattt	gctatgataa	900
tattctgtgc	ttatctccct	gtaaaaagtt	ggcttggggg	ctctggcatg	catctgacct	960
taagggttga	gctgcaccaa	tatgttttta	agcaccgggc	ataatgcttc	gcaaaatttc	1020
agaacatggg	ttgtacagaa	tgtactttcc	tccactcata	caaacccttg	taaaagagta	1080
gtttgaatcc	caactcattc	ttgaaggcca	ccttttgtag	ggtgacagaa	tttaaaaata	1140
cagaatttaa	aaatacttta	tcccagggaa	gtcacacatt	ctaaatccag	aatgaaagaa	1200
gaaatagaaa	cacacttggt	gtggcggtgg	tggtggtgat	ggtggtcgtg	gtggtggtgg	1260
tggtggtggt	ggtgatggtg	gtggtggtgg	tggtggtggt	ggtcgtggtg	gtgtaatgat	1320
cacagtaaag	tgaggcatca	tggcctgaga	gagtcaggca	tcacagctat	tcaagtgaaa	1380
actacctact	actgatttta	gagttctata	atttttagtag	cagccacagg	cctggggcct	1440
gggcctatat	tttcagagag	gaaatgttca	cagcaggtca	actgcagaca	gtgaagatca	1500
gaaatgtttc	ataatcaggt	catcagagaa	aaggcaaagg	agctgatgga	ctttatcctg	1560
aaaaagcaaa	atccaaccca	cctcatgctt	aatgcattca	aagggtctgcg	ggcagaagaa	1620

FIG. 9B

tacattttgc tttttattat tataaattac ctggagaata tttttgtctg aattatctcc 1680
caaataattaa ccataaaaaat aaaaaattcc atgtgtgctt ctcccagggg ctataaagcc 1740
cctggctctta gagttgttgg ggcaaaacct gacctttgaa gtagttactt ttgaagatgc 1800
cataccatac atttggccac ttggagagag tctaattgtca catctaaagg gttactctga 1860
tgctctgttt tctcatatgc ccttggettta cagctaacta tggctccagc taaactataa 1920
agttccttgg caacagagat ggtacgctat gtgtctttga cacagcagaa taaatgctta 1980
gtgaacatta ctgattgcct gacaggacac ctcacacttt ggtactttca acagagggat 2040
gtaaacttat gaagaacaat gaagaatgaa tattggcaat aaaagcaaaa attggttaac 2100
ccaattctag ctctgaaatc attttttaggt agtgggaagt ctttttgttt tgtttattca 2160
ctttacatcc caattgctgt cctccctcca agttccccac caccaccaca gtcctttttc 2220
cctccccttc tctctgaga gaatggagaa cctcctgga tattccccca tcatgaaaca 2280
ttaagtctct gcagggctag acacttcccc cagtgaggcc agtcagggca gccagctag 2340
aaaaagcata toccacagac agacaacagc ttttgggata gccccgttcc agttgttttag 2400
gatccacatg aaggctgagc tgcacatctg ctacatatga atgaggaggc ctaggtccag 2460
cctgtgtatg ttctttgggt ggtgggttcag actctgagag cccaagggt ccaggtcagt 2520
tgactctgtt ggtcttctctg tggacacct gtcccccttc agcccacaat ccttccccta 2580
atccttctcc ttctcacttc cataagagtg tgaggagtct ttaaaaacat gaagcatttt 2640
atctcccag ggcaacacat ggaaatgaaa gattgtgaaa agtaatttaa agaaaaagaa 2700
aaaaaaattt aacaaggaat aagaatcttg tttctctgaa aatgcttaag agtgtggaaa 2760
acataaaactg gattctaata gaatgcaatt ggattgtaat gaaaacctat caaagttatg 2820
aaatagcttt cactaccttg cacaaaatct cttggcatgt gtgttggttg caaatTTTTt 2880
tgtagttta aaaccacaac aataacaaca aaatagcaaa aattgggtct cagcctcatt 2940
cattttttct catttcttgc tctgtgatcg tctgggtctt aagctgacac ctcaccaatt 3000
cctcatcaag accttctgtg aaatttgcaa atgtcccaa aaggagaatt acaataagtc 3060
agagaacgtt ctgtccaatt ctttatccct agtgatggat gagtaaagga tgtataagag 3120
atggataaat ggactgatgt acagataaat gaaggaatat gtacatgggt aggtggatag 3180
atgacttact caacagatga gtagaaggat gagaaataga tggacagctg gactgaggca 3240

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FIG. 9C

tgcaaaagtca	actggagaac	tgagtctctt	gaccatgcac	tgtccagggt	ctcatattcc	3300
ctagagtcca	gggcccattg	ctcctgtgcc	atccccatgc	aaatctaagg	ttaatacgtt	3360
ctacagctga	gtttccttac	atatgtgtct	cagtaagttt	gtatcaacta	attaaatctg	3420
aaaggagttc	cttctgatct	tcccaaacag	agccacactc	gtgatgaagt	cagccctgct	3480
tcattgtggt	tctctggatg	catctggctt	ccatcagcat	aatctttcta	ttcttgatcc	3540
ttccaacctc	ttcaggtctc	agacagaacc	ccatggagca	tcaaagaggt	ttgaccccag	3600
cattgtttat	gtagctgcaa	aaccactaat	aacacagtca	atgacagtag	ctacagagac	3660
agcaggtcag	tgtctggcct	ctgtcaaggc	tttatgagtg	actctctccc	cttcccgcaa	3720
atactcatta	atctccccac	ctccttatta	tttggactgt	gttgaagata	ttatgaaatc	3780
tctgggctct	tcttcccgga	tctagagcca	attacagatt	ctgtaggttt	gacccacctt	3840
gaccagacat	tataaacaca	gtgctggtgc	cctgaagaaa	acagttggag	actccaggca	3900
ttagaatcca	ggcaccagga	actacaggtc	agtggtgaca	gtcgggtctt	ctgtgtatct	3960
cttacacaca	cacacatata	cacacacaac	acaacatata	cacacatata	acacacaaca	4020
catacacata	caacacatac	acacacacaa	cacttttctg	taatgtctcc	aaaattctca	4080
ggctctaggg	aagaagaaat	gtctttttaga	gaatgcggtg	tgatgttcta	taagtctagg	4140
aatacttgat	agaatttaat	gagaagtata	gattagggtc	aagcaagggt	actacatatt	4200
tggaaaccaca	gagttttgaa	agtcattctc	aaagaaatta	tttaggccag	agatgttcaa	4260
aaaatgtttt	gtttgtgaca	tatggaagct	cccatggaga	cattctgtga	ttctcatcaa	4320
tagacagtag	ggatgccacc	aagggtgctaa	cgtcttcatt	accccatcat	ctatcatata	4380
tccaaatggg	ttctttgaaa	acaatctcct	tgtgaaactt	aaagtagcct	tgaaaatata	4440
ataatcttgt	ccagcctctc	atttcaatgg	gaatagattg	aaggcctaag	gaccaaaaaca	4500
aaaaacaaaa	caaacaaaat	aaaaacacca	aaaaaaaaaac	ccataaaatg	aatgagtagc	4560
taagtatttt	ttagaatcca	gcctttcagt	caaagcttga	ttcatgcata	tctgtgttct	4620
gatcttaagg	tgctgtgtct	gtcagttgta	tagttggata	gaggtacaga	tgagctatat	4680
acatcatgct	tcaagatttc	aggatcttat	aactttttata	aagcaaataa	tttgtcttaa	4740
tgcacactaa	taaacaatat	agcaaagttt	gacaggagtt	cagagtactg	ttagagaagt	4800
gaaggggaaga	atttttgttat	gatagtaaag	gggaaaaatca	aattttgagt	catggaatca	4860

FIG. 9D

tacatagttt gacatagaaa gaaccttggc aaccacataa tctaatagcat gagcccaaga 4920
 actggcctgt gtttttaaga tctcattctc agctgttatg taactgaaca gacaagatac 4980
 taagcccaag tatagtgaag ccatgtccag tgatcttaat aggagtgaca ggaatggttg 5040
 gtgatgaaga ggggttgatt ttgagcagga ataccaaaag caatgctgac tgtgcccttg 5100
 gagagaatta gcatgagtcc ttgagagaaa aatgagatgc tattgcacaa gcaacctagg 5160
 gccagatggg gtcaagatag gtggccatcg tggacttttag aaccaggcag gaatgtgatc 5220
 agagatgtac tttatgtagg ttaggtttga ttcagaaacc aggagggtta gcatgtttac 5280
 aatggtgact aaaaacaagc acaaggttat actttaaaga aataatctct gaaaagaagg 5340
 gaggtatatt ttcagtgccg gaaagaggaa tattacaaaa gtgagaggag tagatttgag 5400
 aaagagaagt ggattgtgga ggagcagatg ctcaccacgc ccttactc acttgaactg 5460
 acacccaaag atgaaggtgt gctgtggact gctgaagctc agcctgtggc tgggaagcag 5520
 taaacaaaat tgctcatcac agctgtacaa gatattccat agcatataaa aataaaagtg 5580
 cttaggctat tctcttacia ctctcagcct tatgaatgac ccggaaggaa aagaactcta 5640
 caatgtgcct gtgtctgttc ttacttctc tgccacaagc aaaagagcct tgggaattgg 5700
 ctcagaggga acgtcatcaa acaggtggc cttgaggctg ggctgttatt cgtctacctg 5760
 ggatagagga attcgctatt cttttataat ccaagtgtgg cctggggacc agcagcatta 5820
 ttaagacctg gttgcatgtt tgaaatgcag tctcagattt catcccagac ctaaagagta 5880
 aactgtttt catgaggata caagattaag aaatatgcat tagagagtaa ttggctaaat 5940
 gggtaaatgt catgcaagca ggaggatctg attgactccc caggaccac acagttcca 6000
 tgccgtagag cacatctgta atcacagtag gcgtatgatg aaatgggagg tgaatcaaga 6060
 gaatctctag cagctacggg ctggccagcc tcccatgcac agcactaaat aaggcaagga 6120
 ccaatacctg aagttgtccc attaccttca catatacacc acggcatgtg tgtacttgta 6180
 ctcacacata caaacaata cacacgtgca cacatacaaa actcagagat taaggacaat 6240
 tggcctgaca tatcagttcc taagcctggc tcattgcttg taactacta agcagtatta 6300
 aataaggata ggcgagagaa cagttaccga atggttcaga agtggggcca tgccgtgac 6360
 tttaaacaaa tgtttcatat ttttaataa taacacttag attacaaaat aaatttacta 6420
 caggaaaatg ttaagaacta tcaacaacca ttgactatcc tgtcgccac aaatgagtg 6480

FIG. 9E

tataacaagc accagccgtc cttgtccaca tgtgtgtgtg tctacacagc tatgaattta 6540
attgggataa taatgtgcac attcttttac gctgcagtt tttacttcat gtatttgaaa 6600
tgtttgtgcc acaaatgtca tctttaagga gcatatcctt atttcctgga tttatcattc 6660
cctttcagcc gactggacat tgacagcatt tccaactttt caaccttgta aaaataacta 6720
attgaactat tttataacta agcatttggg caatcaatta cctctgcctg gaatgggggc 6780
aacaacacat gcaatcatgg gaaagccagg atgtgtgtgt ctgatcccta gccctggcat 6840
tcgtgcagaa cctcactctc atctgtgccc tgatatacctt cactctcaag tcttttccca 6900
gtgactttta aaggcaacag aatcatatag ccaataatga aagctacttg gtctacagtt 6960
gtgtggcggt ttttatagat attttcttca tttacatttc aaatgctatc caaaagtcc 7020
cctataccct cccccacct gctcccctac ccactcactc ccacttcttg gccctggctt 7080
tcccccttac tggggcatat aaagtttgct agaccaaggg gcctctcttc ccaatgatgg 7140
ccaactaggc catthttctgc tacatatgca gctagagaca ccagttctgg ggttactggt 7200
tagttcatat tgttgttcta cctatggggg tgcagacccc ttcagctctt gagtactttc 7260
tctagctcct ccattgggag cctgtgttcc catcctatag atgactgtga gcatccactt 7320
ctgtatttgc caggcactgg catatgaaat agtatctgca tttgggtggc gattatggga 7380
tggacccccg ggtggggcag tctctggatg gtccatcctt tcatcttagc tccaaacttt 7440
gtctctgcaa cttcttccat ggatatttta gtccctaata tagggagaaa tgaagtatcc 7500
acaagttgat cttccttctt gatthttotta tgttttagaa gttgtatctt ggatattcta 7560
ggthttctggg ctaatatcca cttatcagtg agtacatatc aagtgaattc ttttgtgatt 7620
aggttacctc actcaagatg atattctcca ctatgttcat agcagcccta tttatagtag 7680
ccagaagctg gaaagaaccc agtccctcaa cagaggaatg gatacagaaa atgtggcaca 7740
tttatgcaat ggagtaccac tcagatatta aaaacaacga atthtatgaaa ttctcgggca 7800
aaacctatc taaagaccag gaataaggaa aagatggact gcctgcctgc agctgggaga 7860
gctggggaga cctttgtgga ttctgtaata cttaggggta cggaacagct tgtggctgga 7920
taattctgag ctccagcatg tctgcccccc aaaaaacatt ctgtthttct gaaagccttt 7980
ttcttctttg cctcagtga gaccagacac tccaactgc agga atg tgc tcc ctt 8036
ccc atg gca aga tac tac at gtaagtaa tcttaacgat cgctcaatca 8084

FIG. 9E

FIG. 9F

aggggcctgg agatcacatg agaagggaaa aggctgagtc aaagggacaa agtccctct 8144
 agccacagaa atctcaaaca ctgaataatt gatcttcac tttgtcaatc acaacagccc 8204
 tctttcctgg tgacagaatg gaacaactgt aagagtggta ttgcttagtc cattttacag 8264
 acccggaac tcaacctcca cgagggtata caattttcct catgtcatgc aattacccaa 8324
 aagcagagag tgggatcgga ctctctgttc tctaaactga tgtagctagt tcttagaaag 8384
 ctcaaacaat cttgagtccc aaggacagca cttttatggc cacctggatt gataacctata 8444
 tcaaaaaaaaa aaaaaggctc cactagatag ccctggctac cctgaaactc tcaactgtgta 8504
 catttaggtg accacgaact cacagagatc tgccttccaa gtgctgggat taaagtatgt 8564
 accaccacac ctgcatcttt gacaataact gagtggatc taaattcttc cagtggctaa 8624
 acagttaagt ccagttccc aaagtctgag aaaaatgcc ggtggtgaaa tctgtacaga 8684
 cctttgttct taatgtacaa gtgagcctgc tttaaaaaca atacgcaagc tgtttttgct 8744
 attgctaagt gttgcagaga cagaaaaggc tcccagaagt ggtaactttg gtccagagg 8804
 tctgttctca aactcattgt gagctctgaa agcaactgat gggcagctct gaaatcagct 8864
 gggcaattag gctaataaca ggcataattt taatgtttca cacgcatgac agttcctccc 8924
 cagctgccct agtacatact taccctccta ggcacgtcat tagaccata ggtataacca 8984
 gtgactaatc aggcctggc ctaattctaa gttggcctcc tatataagt ccaactcagag 9044
 tgtacctcat catggctgta gtgggcccag agtctagga catagacttt tctattgtcc 9104
 aatttctgat ttgtgaattt tctacaaaaa gaattttttt taattttaca aatcaaatca 9164
 cagttactac atcttcagtt ccttcattaa ttagtgttac tatttaaaaa aataaaataa 9224
 atcaagctca gaaacatcat ggatagggtt cattgtatct ccagggtacc tgagcttcaa 9284
 agcaactcct cagacagcca tgaaaacatc ctcaattacc tcatgagaag aactattgt 9344
 catttctgga gcctctgata atcctgagcc taggcagctt tgggatgaaa caatttctac 9404
 ccttattgga acagtgtccc tctcctgtct ggaaacaatt caccaaaggc tccatgtgg 9464
 tgtccagtaa ggtggtatgg ggacagaaat ggacaatgat ccctgagggc agtgatccat 9524
 taaccttgcc ctctatttc ag a atc aag gat gca cat caa aag gct ttg tac 9577
aca cgg aat ggc cag ctg ctg gga gac cct gat tca gac aat tat 9625
agt cca g gtgatcttc cgggtggtggg ggtgggggag tggaggggag ggtgtggggg 9681

[illegible]

gggctctctt ccagaagttg cttagtgtcc atctgccaca aggccttgat tctttccttc 9741

aattgtgtct ctagagacat gagaatattg tcacagtgat aaggagaaga ggtaggggca 9801

gtttcttctt gtaaaaaatg aattccattt accctgcagt ctccatacag aaacaggcca 9861

gagggggggca gaccagtaa cttctagctg agccctacct tgcttaaaac ctgccatctg 9921

tggtcccttc actgtctgaa ttgcattctg tcttacctcc cag ag aag gtc tgt atc 9978

ctt cct aac cga ggc cta gac cgc tcc aag gtc ccc atc ttc ctg ggg 10026

atg caq gga gga agt tgc tgc ctg gcg tgt gta aag aca aga gag gga 10074

cct ctc ctg caq ctg gag gtgagacacc cctcctcatt gcagtcagta 10122

ctgccactgg aacatagtga catctttgaa cccacatgtc ccctctcttg tttcccatct 10182

atctctcttt gcctccagct gagggactct agcctttggg gatgtacaga aagaacatgg 10242

cttcggaaaa ctcttccta ttgagtcctt ctttggccaa gcctctgagg cactaagggc 10302

tgacgtccca accaaacact catttcatct cacagctgtc tccctttccc cacag gat 10360

gtg aac atc gag gac cta tac aag gga ggt gaa caa acc acc cgt ttc 10408

acc ttt ttc cag aga agc ttg gga tct gcc ttc agg ctt gag gct gct 10456

gcc tgc cct ggc tgg ttt ctc tgt ggc cca gct gag ccc caq caq cca 10504

gtg caq ctc acc aaa gag agt gaa ccc tcc acc cat act gaa ttc tac 10552

ttt gag atg agt cgg taa agagacataa ggctggggcc tcgtctagt 10600

ccccagttct gagatcttct tgctcagcat ctctggaaag cagaataagg aagataccaa 10660

agatgtttgg gtcttaatcc ccagaatctg tgaccgtgtt acattaaatg gcaaagggat 10720

tttttttttc cttcatgggc catttggggc cattggaatc atctgaggcc tcatgaggag 10780

aaggaagagg tcagagggag actggggcaa actttggtac taaaagtaac aatggagaca 10840

gggaccataa gctgatgggt aacagtgggt tctagaaacc ggaaatgatg agagctctcc 10900

tgacacaggt tctggatttt tctggactga agaatggtga aataatacag ctccattatt 10960

ttaagccact gagtttgaga tcattcaatg aagctgtcat aataaaacct gtgcttcaca 11020

tacaattcaa tattggtagg caccocgggtg atttcttgga aagacatcta gggattctcc 11080

tggatgctga ttccagggtc cagtggagtc cctgggttga agagatttca caaccagaa 11140

catcaaggctc gactcttcta aaagtcgcgc gttgcacccc ttgcctgaga gcattagcaa 11200

FIG. 9H

GenBank

tttctatttc ataggaaatc tgtgtccctg cccctgctaa agcagggagc ctggaccgctc 11260
ctgatttagt gaggggtgag ctgctggcac ttttttgtgt caccagtgtc ttaagcagtg 11320
atggagcaca aaagatcttt actgagaaga tggccatgaa gctctggcta gacaccaaga 11380
atatgatata agcagagcta cagcacaaga tgagccaatg aggaaagcca ttcagggagg 11440
ctaagcccag cttcccaaag ggacagctaa ccctggactc aaatgaatag gggttttcct 11500
ggcagagaac ataggtcaag cattctaggt agaatcagca attcagaaag gtgtgagaga 11560
ggcatggaga gctccaggca tgtctgggct atgggtgtgc attcttgtgg caagaatcca 11620
acgtctgtgg ttaaggagtt gctgaaaatt aaaataggaa aatgggtaga gtctaattgt 11680
gaatgacttg caaaggagtt tagcccataa gtggggagct cagaggagtc atctaaggat 11740
tgcaagcagg ggccctgtga tcattgctgg accagcctag gtgctacaga gcctaccttc 11800
agctctgcat cctcactcac atccaggtag cttcagaggt caatttctgt gctctgggtc 11860
tatgggtagc ctgaccctgt ttcattcttct tgtataactt aggcacataa gcttagggac 11920
tggtagagtt tacttgagtg attgggtgaat caggcagcac caaactacaa gttgttcagg 11980
gctttaccaa gggggcactg attggagaat tggaatgagg gtgggttagaa tgcattcaga 12040
aaacaagggg aagaaaaatt tgattgctta aagtggaaag tcccaactta aatgttagtc 12100
agtagtttct aattacttga gtctctaatt agaggtagt tggcagtttc tggtagttagt 12160
atctaagttt cattttctta ggctatgacc attctctgag tcgcatgtta gcaatgcagt 12220
aagaactcaa gaccagaat agcctctgtt aattatttta gcaatgatca ctcatctctg 12280
ttgcctcta ttgagatctg ttcccatgga ccaccaggc acatcaggcc tcctagtacc 12340
aacataataa tgattgctgc acagacaaaa tatttttttt cagtatctgg tatttgctac 12400
atttccatta gtgctggagg gaaggctaca acgaccatga aggcattggc cctgccttct 12460
aaggacttac aatgtaatag gagccctgac attataaagt gggtcacctt gtttcaaact 12520
gagccaaact gaggctgagg gcttagatta gtggtaggtc actttccaga catgttcagt 12580
gctaagaaaa acacattctg gggtagttag gatgttttag ttcatttgat aagaagccca 12640
atgattggac tttcaacttc tggaacccat gtggtggaag agagaaccaa cttctgacca 12700
tttgggtcat ggcacatccc ctaccatcac aagaactcac caaaataaat tagaaaaatc 12760
aagaaaaact catatcctat agacctctgg tagaattage agaacgctgc tgtggcactt 12820

FIG. 9I

```

gggatttgaa actcaaaaat ggaagaagct acttgtgacc gttcaagact ccagggaggc 12880
tcctctgaca catcccacga ctcaggctta aattccttct tctccctaga aggccacgcc 12940
atctttctcaa ccaggccaca gatgctataa ttatgtaaat gtgtgggaga ggcacacttt 13000
agatcttatc cactagt 13017

```

[illegible]

FIG. 11A

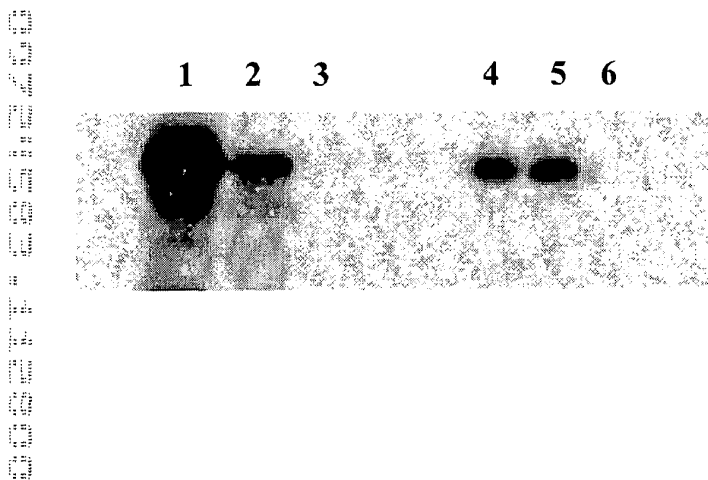
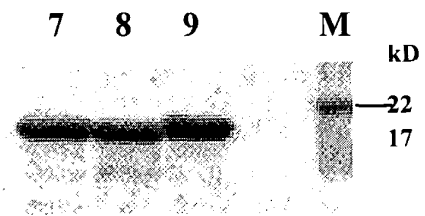


FIG. 11B



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FIG. 12

Spleen

	CD4+	CD8+	CD4+ CD8+	CD3+	NK1.1+	CD3+ NK1.1+
control mice	20.18	3.72	1.67	24.07	3.06	1.4
CS329 mice	15.89	3.99	0.37	22.9	2.08	1.1
Difference:	-4.29	0.27	-1.3	-1.17	-0.98	-0.3

Bone Marrow

	CD4+	CD8+	CD4+ CD8+	CD3+	NK1.1+	CD3+ / NK1.1+
control mice	2.62	2.54	0.49	3.88	1.26	0.49
CS329 mice	2.46	2.35	0.41	4.42	1.53	0.57
Difference:	0.16	0.19	0.08	0.54	0.27	0.08

FIG. 13A

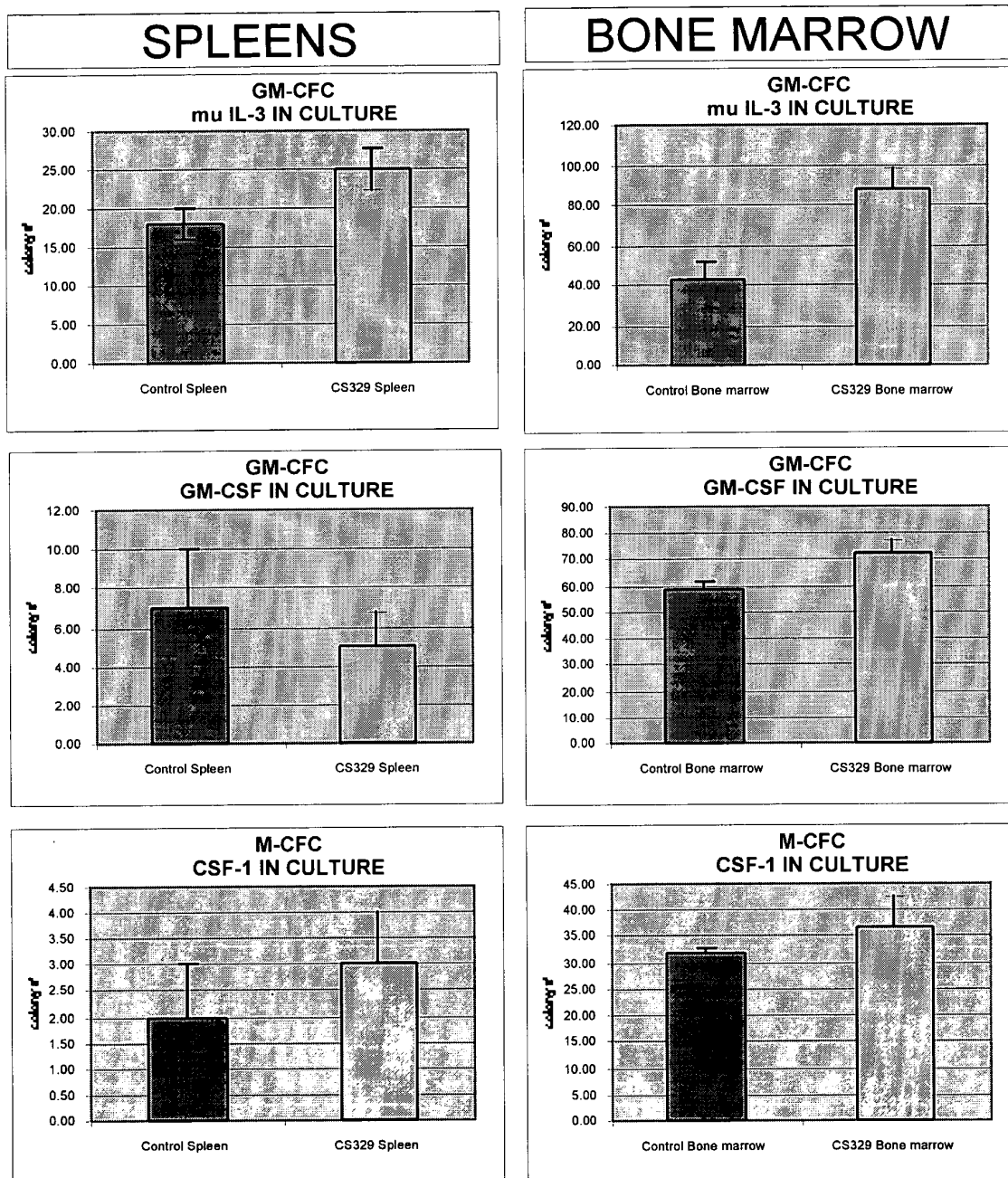


FIG. 13B

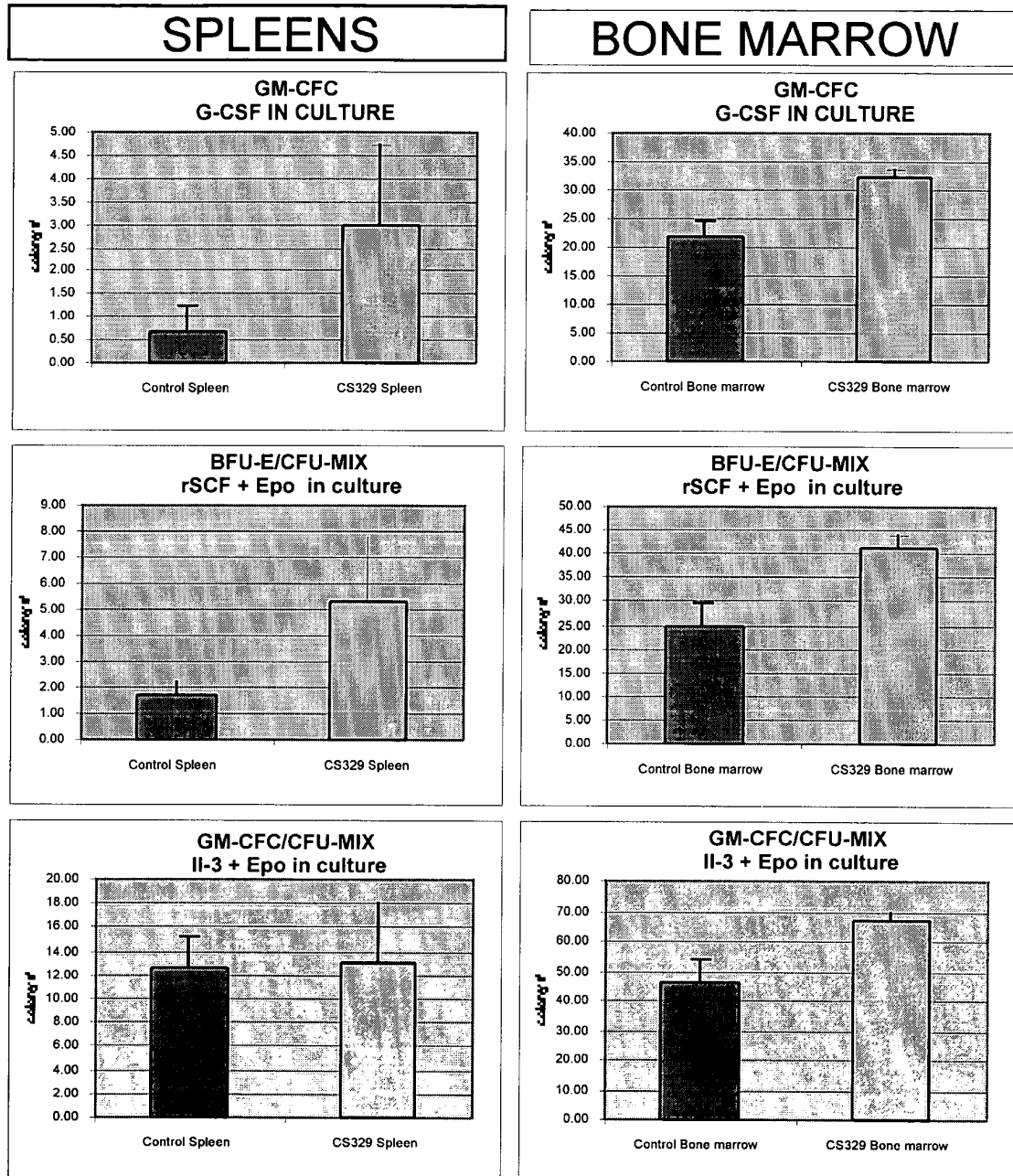


FIG. 14

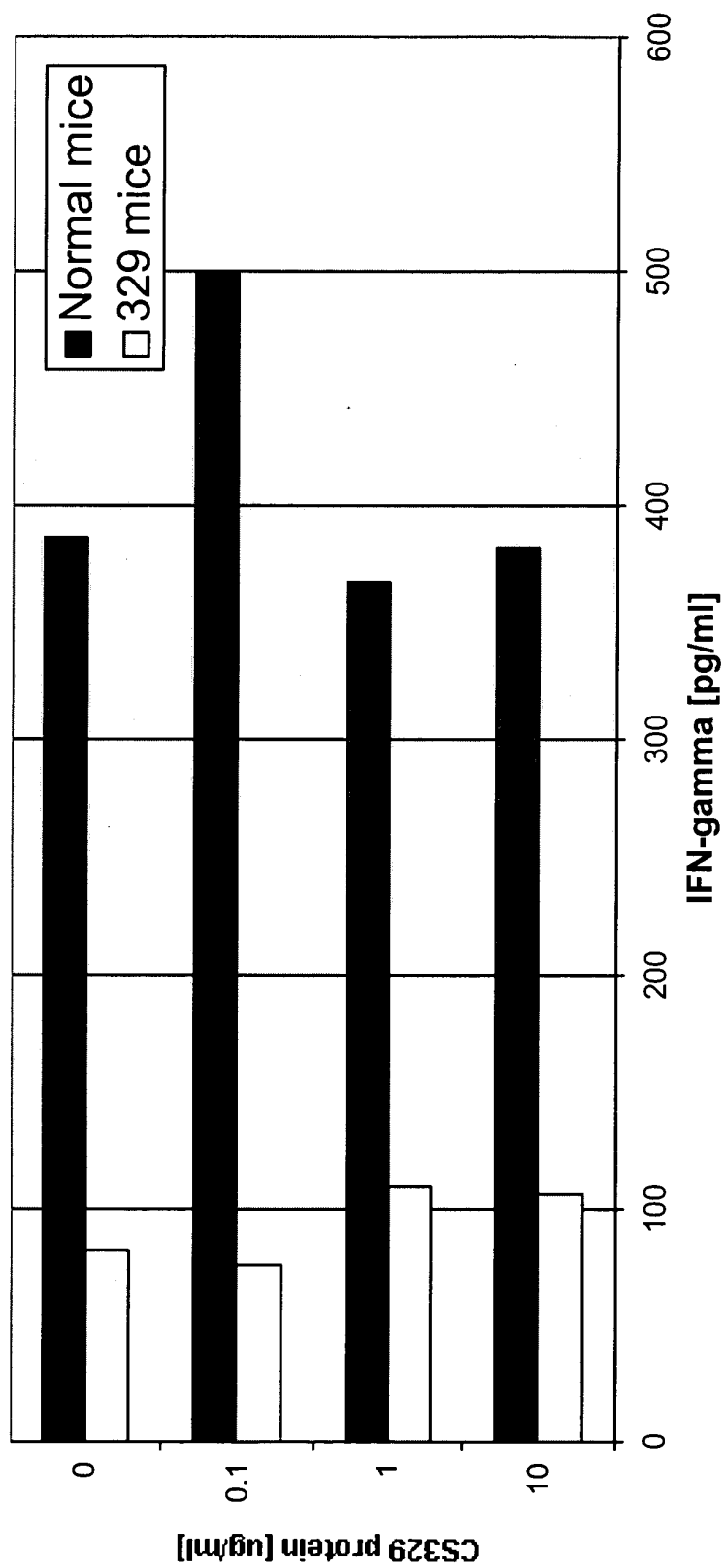


FIG. 15

